

PATENT ABSTRACTS OF JAPAN

(11)Publication number : 11-269650

(43)Date of publication of application : 05.10.1999

(51)Int.Cl.

C23C 16/40

B23B 27/14

C23C 14/06

C23C 28/04

(21)Application number : 10-072960

(71)Applicant : MITSUBISHI MATERIALS CORP

(22)Date of filing : 23.03.1998

(72)Inventor : OSHIKA TAKATOSHI

HONMA TETSUHIKO

NAKAMURA KEIJI

YANAGIDA KAZUYA

(54) CUTTING TOOL MADE OF SURFACE-COATED CEMENTED CARBIDE EXCELLENT IN CHIPPING RESISTANCE

(57)Abstract:

PROBLEM TO BE SOLVED: To provide a cutting tool made of surface-coated cemented carbide, excellent in chipping resistance and exhibiting excellent cutting performance over a long period.

SOLUTION: This cutting tool made of surface-coated cemented carbide is obtd. by chemically vapor-depositing and/or physically vapor-depositing, on the surface of a WC base cemented carbide substrate, a hard coating layer having total overage layer thickness of 3 to 20 μm and composed, in order from the surface side of the substrate, of a TiN layer with a granular crystal structure having 0.1 to 2 μm average layer thickness, a TiCN layer with a longitudinally growing crystal structure having 1 to 15 μm average layer thickness, an Al₂O₃ layer with a granular crystal structure having 0.5 to 15 μm average layer thickness and also having a crystal structure of the α type, κ type or the mixed type of α and κ and a TiN layer with a granular crystal structure having 0.1 to 3 μm average layer thickness. In this case, on the space between the TiCN layer and the Al₂O₃ layer, a Ti₂O₃ layer by chemical vapor deposition or physical vapor deposition showing an X-ray diffraction pattern in which the maximum diffraction peak height appears in the angle of diffraction (2θ) of 24.0 ± 1 degrees by X-ray diffraction using CuK α ray as a radiation source is interposed by the average layer thickness of 0.1 to 2 μm .

LEGAL STATUS

[Date of request for examination]

31.03.2000

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number]

3371796

[Date of registration] 22.11.2002

[Number of appeal against examiner's decision of rejection]

[Date of requesting appeal against examiner's decision of rejection]

[Date of extinction of right]

Copyright (C); 1998,2003 Japan Patent Office